Understanding the “Built” Environment: Towards Healthier Homes and Healthier Kids

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MDCH Strategic Plan for Healthy Housing

- Lead Poisoning
- Asthma
- Unintentional Injuries
- Lung Cancer
MDCH Strategic Plan for Healthy Housing

Lead Poisoning

5,049 children (0-5 years of age) lead poisoned in 2014 (3.5% of those tested).

Asthma

Unintentional Injuries

Lung Cancer
MDCH Strategic Plan for Healthy Housing

Asthma

11.1% of children have asthma.

121 asthma deaths in 2006, with 48 attributed to the home environment.
MDCH Strategic Plan for Healthy Housing

**Injuries**

3,448 deaths (2009) and 360,000 unintentional injuries and poisonings (2010).

**Lead Poisoning**

**Asthma**

**Lung Cancer**
MDCH Strategic Plan for Healthy Housing

- **Lead Poisoning**
- **Asthma**
- **Unintentional Injuries**
- **Lung Cancer**

**Death from Lung, Bronchus Cancer**

- **5,898** ('08)

**Estimated deaths due to ETS & radon**

- **2,330** (2008/2009)
• “We estimated that an increase in blood level from <1 µg/dL to 10 µg/dL was associated with a 6 IQ point decrement (Lanphear, 2005). These studies have been confirmed by over ten studies conducted around the world.”

• “The associations observed by Cecil and colleagues provide a clear warning sign that early lead exposure disrupts brain development in ways that are likely to be permanent.”

• “We estimated that one in five cases of ADHD in US children were due to childhood lead exposure (Froehlich, 2009).”

Research from the Cincinnati Children’s Lead Study
Children less than Six years of age with Confirmed Blood Lead Levels (BLL) >= 10 ug/dL 2013

Number of Children with Confirmed BLL >= 10 µg/dL in CY2013 = 653

No. of Children w/BLL >= 10 in each ZIP Code Area (circles are proportional to the number of children)

- 1
- 2
- 5
- 10

March 28, 2014

Sources: MDCH Data Warehouse

Healthy Homes Coalition of West Michigan
Children less than Six years of Age with Blood Lead Levels (BLL) >= 5 μg/dL 2013

Number of Children with BLL >= 5 μg/dL in CY2013 = 5,702

No. of Children w/BLL >= 5 in each ZIP Code Area (circles are proportional to the number of children)

March 26, 2014

Sources: MDCH Data Warehouse
Frequent sources of lead exposure for children in Michigan

- Lead-based paint in older housing (esp. windows, exterior siding)
- Lead-contaminated dust
- Lead-contaminated soil
- Cultural exposures
- Parent’s work or hobbies
Asthma Hurts Kids

- Children still die from asthma.
  - 121 asthma deaths in Michigan in 2006
  - 48 of those attributed to the home environment
  - 9 people die from asthma in the U.S. every day

- Children 0-4 have the highest rate of hospitalization.

- ER visits, hospitalizations, death are all preventable.
Institute of Medicine
Cause Development of Asthma

Dust Mites – Sufficient Evidence: Causal

ETS – Sufficient Evidence: Association

Cockroaches – Limited Evidence: Association
Institute of Medicine
Exacerbates Asthma

Sufficient Evidence: Causal

- Cats
- Cockroaches
- House dust mites
- ETS (preschool)
Institute of Medicine

Exacerbates Asthma

Sufficient Evidence: Association

Dogs
Fungi & Molds
Nitrogen Oxides
Rhinovirus
Institute of Medicine
Exacerbates Asthma

Limited Evidence: Association

Domestic Birds

ETS (older)

Formaldehyde

Fragrances

Respiratory Syncytial Virus (RSV)
Toxic products within children’s reach
Rat poison found near children’s toys
Carbon monoxide exhaust escaping into the house
Scalding water
9% Fire & Burns
43% Falls
34% Poisoning
5% Choking & Suffocation
3% Drowning
5% Other
1% Firearms
Cancer

Environmental Tobacco Smoke (ETS)

Radon
What Can Home Visitors Do?

Assess → Educate → Link to Resources → Case Manage
What Can Home Visitors Do?

Critical Areas to Assess

1. Sleep areas
2. Play area
3. Outside
4. Optional areas that tell you a lot:
   - Basements
   - Under sinks
What Can Home Visitors Do?

Ways to Assess

1. Visual
2. Sniff test
3. Questions
4. Data on file
What Can Home Visitors Do?

Educate on Lead: Testing Children

1. Children should be tested until age five, and especially at one and two years of age.
2. Medicaid and insurance pay for the lead test.
3. WIC tests children in many counties.
4. Ask your child’s doctor.
What Can Home Visitors Do?

Educate on Lead: Safe Homes

1. Lead dust is invisible and can get on your child’s hands and toys.
2. Chipping and peeling paint can poison children.
3. Don’t let your child play in bare soil.
4. Check your home for lead hazards.
What Can Home Visitors Do?

Educate on Lead

Protect Your Family From Lead in Your Home

Educate
What Can Home Visitors Do?

Educate on Asthma

Only in homes where children have or are suspected of having asthma.
What Can Home Visitors Do?

Educate on Asthma

1. Diagnose
2. Medication
3. Education and Case Management
4. Reduce Triggers
What Can Home Visitors Do?

Educate on Asthma

Educate on Asthma

- Asthma Home Environment Checklist
  - Dust Mites
    - Enter home with allergens
  - Wax Fumes
    - Enter home with allergens
  - Warm-Bed Bugs (such as cockroaches)
    - Enter home with allergens
  - Mold
    - Enter home with allergens
  - Steamers
    - Enter home with allergens
  - Paint
    - Enter home with allergens
  - Bees
    - Enter home with allergens

Educate on Asthma
What Can Home Visitors Do?

Educate: Accidental Injury Topics

1. Observe trip and fall hazards
2. Carbon Monoxide #1 cause of poisoning deaths – get an alarm?
3. Water < 120° F
4. Smoke Alarms
5. Safe Sleep
What Can Home Visitors Do?

Educate on Cancer

1. Quit smoking, or at least smoke outside
2. Radon second leading cause of lung cancer
What Can Home Visitors Do?

Resources for Lead

1. Separating kids from the hazards
2. Cleaning interventions
3. Lead Hazard Control programs
4. Other rehab programs
5. Relocation options

Link to Resources
What Can Home Visitors Do?

Resources for Asthma

1. Primary care
2. Local asthma coalition
What Can Home Visitors Do?

Resources for Unintentional Injury

1. Housing rehab programs
2. Local code enforcement
What Can Home Visitors Do?

Resources for Cancer

1. Smoking cessation
2. DIY radon test kits from Local Public Health

Tip – they are often FREE in January!
What Can Home Visitors Do?

Case Manage
Screening Tool

Being developed in cooperation with Wayne State University for the Grand Rapids program “Healthy Homes for Educational Success”
Screening Tool

GOALS:

• 5 minutes or less
• Validate
Screening Tool

Three steps

1. Outside
2. Sniff Test
3. Play Area
Screening Tool

Based on observation

Supplemented with questions

Non-invasive
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